

slaty grey, scarcely paler than the upper surface. Upper surface of hands and feet dull brownish grey, the darker metapodial markings present, but less defined than usual. Tail well-haired, brown above and at the end all round, sharply defined white below for its proximal two thirds.

Skull and teeth apparently quite of the usual proportions, the different species seeming to differ from each other only in size.

Dimensions of the type (measured in skin) :—

Head and body (stretched) 120 millim.; tail 92; hind foot (s. u.) (wet) 23·2.

Skull: greatest length 24; basal length 22; interorbital breadth 5·7; length of upper tooth-row 11·2; combined length of  $p^4$  and three molars 6·5; lower tooth-row from tip of incisors 10·4.

*Hab.* Kuantun, N.W. Fokien. Altitude 1200 m.

*Type.* B.M. no. 2. 6. 10. 3. Presented by F. W. Styan, Esq. "Winter."

This species is most nearly allied to the Himalayan *C. himalaica*, but differs by its smaller size, smaller teeth, paler general colour, darker belly, and the non-extension of the white of the underside of the tail to the end. The Japanese *C. platycephala* is much larger, the beautiful Sze-chuen *C. Styani* is smaller, with a strongly contrasted light underside, and the Bornean *C. phœura* is darker throughout, with a wholly brown tail. Although undoubtedly all very closely allied to each other, the different species seem to be readily separable by these characters of size and colour.

## XXV.—*A new Vole from the Lower Yang-tse-kiang.*

By OLDFIELD THOMAS.

THE only Vole hitherto known from the Oriental part of China has been the peculiar *Microtus* (*Eothenomys*) *melanogaster*, M.-Edw., found in the mountains of N.W. Fokien, and it has therefore been with much interest that I have examined a series of a species found by Mr. E. B. Howell near Nanking, on the Lower Yang-tse-kiang, the river usually considered as the dividing-line between Palæarctic and Oriental China.

The species proves to be of considerable interest from its combination of characters, as will be seen below.

Acting on the suggestion of Mr. Howell, I propose to call it

*Microtus calamorum*, sp. n.

Size comparatively large (hind foot attaining 23 millim., s. u.). General colour above dark brown, of about the same intensity as in European *M. agrestis*, but more heavily lined. Sides of nose, rump, and hips with a slight fulvous suffusion. Under surface whitish, the bases of the hairs slaty. Ears fairly long, not entirely hidden by the fur, dark brown. Hands pale greyish, feet dull brown above. Tail more than twice the length of the hind foot, blackish brown above, white below.

Lateral glands apparently present. Mammæ 2—2=8. Sole-pads only 5; hinder part of sole hairy. Claws of hind feet longest.

Skull large and powerful, rounded above, unusually high, cylindrical, and unflattened; the height from the molar surface to the vertex nearly equal to the breadth of the brain-case. Ridges and angles of brain-case but little marked. Interparietal of medium size, its hinder edge straight, directly transverse, its anterior also but little bowed, except for the median projecting point. Anterior edge of zygoma-root concave. Palatal foramina contracted behind. Pits on each side of hinder palate deep and well defined, the opening of the posterior nares narrow, sharply V-shaped. Bullæ of medium size.

Incisors strongly thrown forward, visible from above. Molar pattern essentially as in *M. arvalis*, but  $m_1$  more simple.  $M^1$  with the usual five spaces and without any posterior extra projection,  $m^2$  with four and  $m^3$  with four spaces and a posterior  $c$ , all these teeth being exactly as figured by Blasius\* in *M. arvalis*.  $M_1$  with six spaces and a simple anterior triangle, as figured by Blasius (p. 359) in *M. nivalis*, but the outer anterior angle rounded and the antero-internal edge slightly hollowed, so as to produce an indistinct extra angle.

Dimensions of the type (measured in the flesh):—

Head and body 127 millim.; tail 53; hind foot (s. u.) 21; ear 14. In a larger specimen these measurements are respectively 139, 53, 23, and 14.

Skull: basilar length 26.1; greatest breadth 17; breadth

\* Säug. Deutschl. p. 379.

of brain-case above zygomata 12·7; height of crown from molar level 12·1; palate length 15·5; length of palatal foramina 5·3; length of upper molar series 7·5.

*Hab.* Lower Yangtse, near Nanking. Sea-level. (Type taken on the north bank.)

*Type.* Female. B.M. no. 2. 6. 21. 5. Original number 10. Collected 28th February, 1902, by E. B. Howell.

From the number of mammae and sole-pads, the projecting incisors, and other characters it appears to me that *M. calamorum* is most nearly allied to the American species placed by Miller with the Old-World water-voles in the subgenus *Arvicola*. Indeed, its tooth-pattern is by no means unlike that of *M. (Arvicola) macropus*, as figured by him in his important work on the subfamily\*. The habits of the animal are in agreement with this view of its affinities.

Perhaps I should myself have been disposed to recognize this "*Aulacomys*" group as subgenerically distinct from true *Arvicola*, but have not worked at the subject sufficiently to express a definite opinion.

Mr. Howell sends me the following account of the habits of *M. calamorum*:—

"This vole is found on both banks of the Yangtze River, and is particularly common around Nanking. It is never found far from water—not that it is aquatic in its habits, but on account of its apparent inseparability from the peaty soil, originally the alluvial deposit of the river, and the reeds which grow there in such profusion.

"These reeds, which in summer attain a height of from 12 to 15 feet, are all cut down in winter. The ground below is dotted with patches of coarse grass, and it is below this grass that the voles for the most part make their burrow. The animals are gregarious in their habits, sometimes covering an area of 15 yards square with their holes.

"Their food, from an examination of their stomachs and also of their droppings, consists of the usual roots, grasses, &c., and also of the pith of the reeds, of which they must destroy a large quantity. The female produces five or six at a birth.

"The adult attains a considerable size, one caught by me being 139 millim. from snout to root of tail.

"Individual varieties are not unknown, as several in my possession show signs of a white patch between the ears (*e. g.*, no. 22). In several, in fact in nearly all *large* specimens

\* N. Am. Fauna, no. 12, p. 67 (1896).

trapped by me during the months of February and March, 1902, the long brown hair on the rump and between the scapulars is abraded, leaving only the dark grey fur below.

"This vole occurs also at Chinkiang (according to Mr. de La Touche), where, during the floods of the summer of 1901, it was flooded out of its burrows and invaded the settlement.

"In the event of the vole proving a new species, which, from what Messrs. Styan and La Touche tell me, seems not impossible, might I suggest that some specific name be given to it which would imply its apparent inseparability from the reeds among which it is invariably found?"

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XXVI.—*Diagnosis of a new Central-American Porcupine.*

By OLDFIELD THOMAS.

*Coendou Rothschildi*, sp. n.

A spinous short-haired species related to the *C. quichua*, Thos., of Ecuador, and widely different from the long-haired Central-American *C. mexicanus*. Distinguished from *C. quichua* by being profusely speckled with white, the spines of the back all white-tipped. Skull rather larger than in that animal, more inflated above the orbits, and with a larger nasal opening (breadth 17 millim.). Anterior cheek-tooth ( $p^4$ ) scarcely or not larger than the molars.

Dimensions of the type:—

Head and body 410 millim.; tail 330; hind foot, s. u. 60, c. u. 68.

Skull: basilar length 71; length of upper cheek-tooth series 17.3.

*Hab.* Sevilla Island, off Chiriqui, Panama. Coll. J. H. Batty.

This interesting porcupine, of which further details will be given later, represents the *C. bicolor-quichua* group, hitherto not recorded north of Ecuador. It has no near relationship to the thickly furry *C. mexicanus*, the only species hitherto recorded from Central America.